

Electrical Network Design (Contestable Works) Safety Report

This safety report is a checklist of possible safety concerns as identified by the Level 3 Designer and is inline with the requirements of the current WHS regulations. Further input from the Level 1 installer is required before and during construction to identify and control any further safety risks that may be latent in the works. This report/checklist does not diminish any responsibility of the Level 1 ASP or the Principle contractor to provide a safe work environment and indentify, control & report hazards as required under the Work Health & Safety Act 2011.

Project Name & Discipline:	ESTABLISHMENT OF NEW PADMOUNT SUBSTATION AT KINGSWOOD TAFE, 12-44 O'CONNELL ST, KINGSWOOD NSW 2747		
Endeavour Energy Project No:	ULL3222	Mentis Project No:	ULL3222
Client/Principals Name:	Kingswood TAFE	Issue Date	15/06/2021
Designer:	Mentis Consulting Engineers	Checked By:	Spiro Mentis
Scope of Works:	INSTALLATION OF A 1000kVA PADMOUNT SUBSTATION FOR THE NEW CONTRUCTION HUB BUILDING INSIDE KINGSWOOD TAFE. WORKS INCLUDE EXCAVATION, CABLE LAYING & CONNECTION WORKS.		

Item	Activity	Risks	Site Risk Rating (As Per Matrix)	Recommended Risk Mitigation Controls (Responsibility)
A	Site specific			
	Accessing Site	Risks of worker accessing the site without proper induction, risk of workers/public gaining unauthorized access of whole/part of site, risk of workers not being able to safely move around site	D3 Medium	<ul style="list-style-type: none"> • Safety Inductions for the work site (Level 1 ASP / Principle Contractor) • Provide clearly marked pathways, access ways and restricted areas (Level 1 ASP / Principle Contractor) • Provide clear signage with site conditions upon entry (Level 1 ASP / Principle Contractor) • Erect fencing/barricades around site area to stop unauthorized access (Level 1 ASP / Principle Contractor)
	Traffic Control & Public Safety	Risk of workers or general public being struck by vehicles	D4 Medium	<ul style="list-style-type: none"> • Notify road authority of works (Level 3 ASP) • Obtain all permits required for works & submit road traffic plan to authority (Level 1 ASP) • Contractor to provide traffic control for work site (Level 1 ASP)
Notes: 1. Individual risk controls to be employed should be categorised in priority order (E.g. Substitution, Isolation, Engineering control, Administrative controls) 2. Safe Work Method Statements are required for all high risk work as defined in the Work Health & Safety Act 2011 3. All construction projects above \$25,000 required a Work Health & Safety Management Plan 4. Principle contractor may be head contractor, builder or Level 1 ASP depending on contractual relationship with client				

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B	Pole Installation/ Trenching/ Underbore			
	Existing Services	Risks of damaging existing inground services (water, gas, telecommunications, electrical)	C3 Medium	<ul style="list-style-type: none"> • Perform services searches (DBYD) and incorporate information into design (Level 3 ASP) • Level 1 Installer to confirm services searches by performing own DBYD and services search and raise any discrepancies with Level 3 Designer (Level 1 ASP) • Level 1 to carry out non-destructive digging or water jetting to uncover existing services as needed (Level 1 ASP)
	Trenching	Risks of trenches collapsing on workers, workers or general public falling into trench, noise	C3 Medium	<ul style="list-style-type: none"> • Provide dedicated walkways for workers & public (Level 1 ASP/Principle) • Provide dedicated exclusion zones around worksite (Level 1 ASP/Principle) • Provide battering/shoring as required (Level 1 ASP/Principle) • Backfill trenches as soon as possible after required works are completed (Level 1 ASP/Principle)
	Working with Heavy Machinery / Equipment	Risks of employees and general public being struck, machinery rolling over	D3 Medium	<ul style="list-style-type: none"> • Use only licenced operators for specific machinery (Level 1 ASP/Principle) • Provide PPE (Hi-Viz, Ear Protection) to minimise risk (Level 1 ASP/Principle) • Follow manufacturers guidelines when operating the machinery (Level 1 ASP/Principle)
Notes: 1. Individual risk controls to be employed should be categorised in priority order (E.g. Substitution, Isolation, Engineering control, Administrative controls) 2. Safe Work Method Statements are required for all high risk work as defined in the Work Health & Safety Act 2011 3. All construction projects above \$25,000 required a Work Health & Safety Management Plan 4. Principle contractor may be head contractor, builder or Level 1 ASP depending on contractual relationship with client				

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C	Cabling / Jointing / Installation of Apparatus			
	Cable Jointing	Risk associated with working near or on live cables, chemical exposure (resin)	D4 Medium	<ul style="list-style-type: none"> • Apply for all required permits to work on supply authority assets and adhere to all supply authority requirements (Level 1 ASP) • Perform correct isolation and testing techniques and prove that the cables are de-energized before performing works (Level 1 ASP) • Take note of Ausgrid Safety Alerts that may be applicable. Inspect existing cables for degradation and take necessary precautions. • Use insulated, undamaged tools and equipment (Level 1 ASP) • Provide PPE (Dust Masks, Ear Protection etc) to minimize risk (Level 1 ASP)
	Underground Cable Installation	Manual Handling risks (depending on size), being struck by cable and/or cable drums, slips trip & falls, working near live cables	D2 Low	<ul style="list-style-type: none"> • Apply for all required permits to work on supply authority assets and adhere to all supply authority requirements (Level 1 ASP) • Perform correct isolation and testing techniques and prove that the cables are de-energized before performing works (Level 1 ASP). Take note of Ausgrid Safety Alerts that may be applicable. Inspect existing cables for degradation and take necessary precautions. • Use insulated, undamaged tools and equipment (Level 1 ASP) • Mechanical equipment to lift heavy items (Level 1 ASP) • Use correct lifting techniques (Level 1 ASP) • Secure cabling drums correctly (Level 1 ASP) • Keep worksite clean and free of debris (Principle / Level 1 ASP)
Notes: 1. Individual risk controls to be employed should be categorised in priority order (E.g. Substitution, Isolation, Engineering control, Administrative controls) 2. Safe Work Method Statements are required for all high risk work as defined in the Work Health & Safety Act 2011 3. All construction projects above \$25,000 required a Work Health & Safety Management Plan 4. Principle contractor may be head contractor, builder or Level 1 ASP depending on contractual relationship with client				

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D	Installation of Apparatus			
	Substation Installation	Manual Handling risks, equipment falling or striking workers, slips trip & falls, working near live cables	D2 Low	<ul style="list-style-type: none"> ● Apply for all required permits to work on supply authority assets and adhere to all supply authority requirements (Level 1 ASP) ● Install substation as per applicable supply authority's standards and design drawings (Level 1 ASP) ● Perform correct isolation and testing techniques and prove that the cables are de-energized before performing works (Level 1 ASP) ● Use insulated, undamaged tools and equipment (Level 1 ASP) ● Mechanical equipment to lift heavy items (Level 1 ASP) ● Use correct lifting techniques (Level 1 ASP) ● Secure equipment correctly to manufactures specifications (Level 1 ASP) ● Keep worksite clean and free of debris (Principle / Level 1 ASP) ● All workers that are working above 2m to have working at heights tickets/licences (Level 1 ASP) ● Use insulated elevated work platforms as required (Level 1 ASP)
<p>Notes:</p> <ol style="list-style-type: none"> 1. Individual risk controls to be employed should be categorised in priority order (E.g. Substitution, Isolation, Engineering control, Administrative controls) 2. Safe Work Method Statements are required for all high risk work as defined in the Work Health & Safety Act 2011 3. All construction projects above \$25,000 required a Work Health & Safety Management Plan 4. Principle contractor may be head contractor, builder or Level 1 ASP depending on contractual relationship with client 				

Risk Matrix

Residual Risk Rating = Consequence Factor x Probability Factor

Consequence Factor is a measure of the expected maximum level of harm or impact.

Probability Factor is a measure of the chance or likelihood of the selected level of consequence occurring

Bot factors must take into account the existing controls and the effectiveness of the control environment

					Unlikely	Possible	Likely	Almost Certain
					The event has occurred less than once every ten years, but more than once every thirty years	The event has occurred less than once a year, but more than once every ten years	The event has occurred more than once a year but less than several times	The event has occurred several times a year or more than once during the Project/Program
Consequence	Safety	Environmental	Financial Impact	Compliance	D	C	B	A
Severe	One or more fatalities or significant irreversible injuries to multiple people	Very serious long term, wide spread impairment of ecosystem function or localised damage of endangered or heritage item beyond recovery	>\$50 Million	Very High fines for company and individual, and potential jail term for individuals. Extensive litigation. Loss of operation or license	D5 High	C5 High	B5 Extreme	A5 Extreme
Major	Significant irreversible injuries to one or more persons	Serious widespread, long term damage to ecosystem requiring significant rectification	\$50 Million - \$5 Million	High fines for company and individuals Lengthy litigation	D4 Medium	C4 High	B4 High	A4 Extreme
Moderate	Moderate irreversible injuries to one or more persons	Measurable, medium term damage over a large area but not affecting ecosystem function	\$5 Million - \$500,000	Medium level fines for Company only. Medium duration litigation	D3 Medium	C3 Medium	B3 High	A3 High
Minor	Reversible disability and/or medical treatment injury requiring immediate treatment or follow-up treatment by a medical professional	Medium term impact on biological or physical environment over a limited area	\$500,000 - \$50,000	Low level fines for Company only. No possibility for Jail for individuals. Short term duration litigation	D2 Low	C2 Medium	B2 Medium	A2 Medium
Insignificant	Low level symptoms requiring first aid only	Limited localised damage to minimal area of low significance	<\$50,000	Warning / Notification for Regulator. No fines incurred but administration costs may be payable. No litigation.	D1 Low	C1 Low	B1 Medium	A1 Medium